

Appln. No. 10/777,627  
Amdt. dated February 21, 2008  
Reply to Office Action of November 21, 2007

Amendments to the Drawings

The attached sheet of drawings includes changes to Fig. 2. This sheet replaces the original sheet including Fig. 2. In Fig. 2, element 8 has been deleted.

Attachment: Replacement Sheet  
Annotated Sheet Showing Changes

REMARKS

The Official Action of November 21, 2007, and the prior art cited and relied upon therein have been carefully studied. The claims in the application remain claims 2-13, and these claims define patentable subject matter warranting their allowance. Favorable reconsideration and such allowance are respectfully urged.

Claim 1 has been cancelled, new independent claims 7 and 8 and dependent claims 9-13 have been added. Claim 2-13 remain in the application for consideration.

In response to the Examiner's objection to the drawings and rejection of claims 1-6 under 35 U.S.C. 112, first paragraph, Applicant has cancelled claim 1 in favor of new independent claim 7, which has been drafted to eliminate the reference to the "... cylinders being provided within a single block formed as a unit together with said seats, said conduits and said manifolds." Applicant has further amended the specification and drawings to eliminate the reference to "seats 8" and notes that the plungers slid in cylinders 71 (see page 5, lines 8-9 of the specification).

Applicant respectfully submits that the Examiner's objection to the drawings and rejection of the claims under 35 U.S.C. 112, first paragraph, has now been overcome.

To facilitate the Examiner's review, Applicant notes the following:

The cylinders are provided within a single block together with the compartments that receive the intake valves, conduits and manifolds, can be derived from the description and drawings as filed.

In this regard, see page 5, lines 8-18 of the specification which provides that "...the plungers 6 [which] are each inserted into a cylinder 71 provided within the head 7. Each cylinder 71 extends into a compartment 72 coaxial therewith to receive the intake valve 74; the compartment 72 communicates via the intake conduit 73 with the intake manifold 70, the axis of which is coplanar with the cylinder axes."

The fact that the intake valve 74 is maintained in position against a portion of the block can be derived by the drawings (figs. 2-3).

New independent claim 8 difference from new claim 7 in that claim 8 adds features relating to the dimension of the delivery conduit 80, such features can be deduced, with no inventive skill, by reading in combination pg. 5, lines 22-25; page 6, lines 3-6 (for dimensions) and figures 2 - 3.

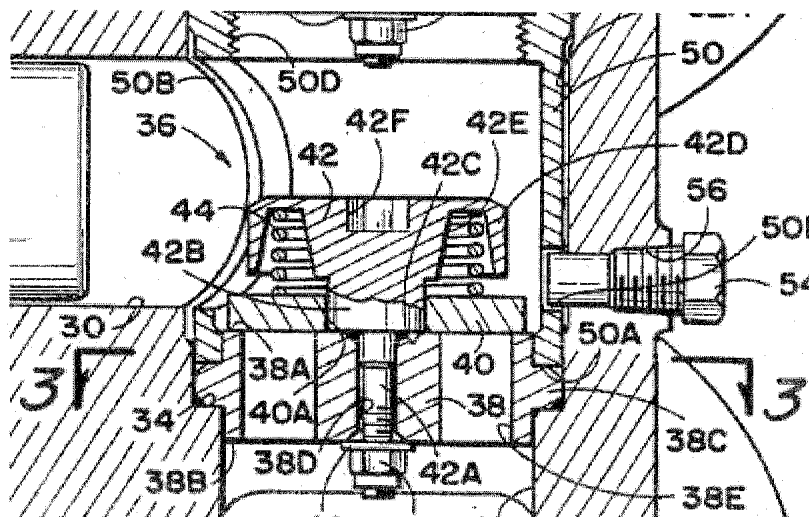
The Examiner has further rejected claims 1-4 under 35 U.S.C. 103(a) as being anticipated by Mulvey '302 in view of Elliott '316 and claims 5 and 6 under 35 U.S.C. 103(a) as being unpatentable over Mulvey in view of Elliott further in view of Haylea '214. Applicant respectfully traverses both of these rejections as applied to new independent claims 7 and 8.

Mulvey does not have cylinders provided within a single block together with a compartment that receives the intake valves, the conduits and the manifolds.

In Mulvey, sealing of the intake valve is not attained by the unit itself, as claimed in claim 1, since Mulvey does not provide such unit.

In Elliot the intake valve is not maintained in position by the unit itself and at the same time in a position that is an extension of the cylinder in front of the line of the cylinder.

See for example a portion of Fig. 2 of Elliott.



Col. 4, lines 10-31 of Elliott state that a retainer cage member 50, having substantially cylindrical shape, is necessary to hold intake valve seat 38 in position.

The position in which intake valve is mounted in Elliott is not optimal since retainer cage member 50, which has a cylindrical shape, must have aperture 50B for the action of the plunger. Therefore, aperture 50B must be aligned with plunger chamber 30 and that is ensured by a further element, absent in the claimed invention, namely alignment screw 54.

Only substantial modifications of Mulvey, not taught by the prior art, but only conceivable in hindsight, would have been necessary to adapt any teaching taken from Elliott to Mulvey in order to define over claims 7 and 8.

Applicant further respectfully traverses the Examiner's statement that col. 4, lines 52-60 of Elliott teaches the skilled in the art to decrease the amount of closure members needed to seal the pump.

While it may be a beneficial effect in general, Elliott does that in a complicated way. See in fact that the mentioned passage really teaches the skilled man to use threaded closure member 76 to tighten the valve assemblies 36 and 52 and their retainers 50 and 70 in secure position relative to each other and relative to the plunger chamber 30.

In comparison, the claimed invention does not claim a single closure member. Also, applying the real teachings of Elliott to Mulvey, as explained in the previous paragraph, would not have simplified construction of the pump, because Elliott does teach a plurality of elements needed to retain the valves into position that are not present in the claimed invention.

Concerning new claim 8, we note that the claimed concept is that the intake manifold and the delivery manifold are connected by at least a delivery conduit having diameter smaller than the diameter of the housing of the delivery valve.

This is absent in Elliott and the fact that there are two parallel conduits in the seat 58 for valve 52 in Elliott is a different thing because these conduits are in a different position and their dimensions must be chosen with regard to the primary function of valve retaining element 58, a situation that does not apply in Applicant's case because conduit 80 has nothing to do with valve retaining elements.

The claimed configuration also allows for the realization of a conduit 80, having a small diameter, that allows to increase the mechanical strength of the pump. As explained at page 4, lines 14-16, such a solution allows for a

more robust connection between the cylinder head and the delivery conduit which is not taught by the prior art. This solves the problem of possible cracks and fractures that can affect the pump when working at high pressure, for example 300 bar or more. Also, there is no need to use stainless steel which is costly, but brass may be used for the pump construction.

Finally, the prior art even in combination does not lead to idea that the intake conduit and the delivery conduit are realized independently one from the other in such a way that the diameter of conduit 80 can be chosen at will.

Applicant respectfully submits that the claimed invention patentably defines over the cited prior art on the basis of the structural differences noted above.

The prior art documents made of record and not relied upon have been noted along with the implication that such documents are deemed by the PTO to be insufficiently pertinent to warrant their applications against any of applicant's claims.

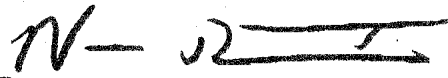
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Favorable reconsideration and allowance are  
earnestly solicited.

Respectfully submitted,

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